ABSRACT

The present invention describes a method for separating or partially separating heteroduplex and homoduplex DNA molecules in a mixture. In the method, the mixture is applied to an anion-exchange chromatography medium. The heteroduplex and homoduplex molecules are eluted with a mobile phase containing an eluting salt, including an anion and a cation, a buffer, and preferably including an organic solvent. The eluting is carried out under conditions effective to at least partially denature the heteroduplexes (e.g., thermal or chemical denaturing) resulting in the separation of the heteroduplexes from the homoduplexes. The method has many applications including, but not limited to, detecting mutations and comparative DNA sequencing.